

What is claimed is:

1. A method of laser etching a servo pattern on magnetic data storage media comprising:

providing a source beam of laser energy;

5 separating the source beam of laser energy into two or more etching beams;
directing the etching beams onto the magnetic data storage media, whereby
at least two servo tracks in the servo pattern are written simultaneously on the
magnetic data storage media.

10 2. A method according to claim 1, wherein the magnetic data storage media
comprises a disk, and further wherein the method comprises rotating the disk
relative to the etching beams.

15 3. A method according to claim 1, wherein the magnetic data storage media
comprises tape, and further wherein the method comprises moving the tape relative
to the etching beams.

4. A method according to claim 1, wherein the magnetic data storage media
comprises a magnetic coating on a substrate, and further wherein the etching beams
20 remove at least a portion of the magnetic coating in ablated regions defined by the
servo pattern.

5. A method according to claim 4, wherein the etching beams remove only a
portion of the magnetic coating in the ablated regions.

25 6. A method according to claim 1, wherein the magnetic data storage media
comprises a magnetic coating on a substrate, and further wherein the etching beams
remove at least a portion of the substrate in ablated regions defined by the servo
pattern.

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7. A method according to claim 1, wherein separating the source beam comprises directing the source beam into a beam splitting mirror block.
8. A method according to claim 1, wherein separating the source beam
5 comprises directing the source beam into a diffractive optical element.
9. A method according to claim 8, wherein the diffractive optical element comprises a diffraction grating.
- 10 10. A method according to claim 8, wherein separating the source beam comprises directing the source beam into a holographic optical element.
11. A method according to claim 1, wherein the source beam is linearly polarized with a polarization vector, and further wherein separating the source beam
15 comprises directing the source beam into a Wollaston prism with an optical axis that is offset from the polarization vector of the source beam.
12. A method according to claim 11, wherein the optical axis of the Wollaston prism is offset from the polarization vector of the source beam by about 45 degrees.
- 20 13. A method according to claim 11, wherein the Wollaston prism is located between first and second lenses, and further wherein changing the distances between the Wollaston prism and the first and second lenses changes a divergence angle between the etching beams.
- 25 14. A method according to claim 1, wherein power variations between the two or more etching beams are about 10% or less.

15. A method according to claim 1, wherein the two or more etching beams diverge at a divergence angle, and wherein the method further comprises adjusting the divergence angle to obtain a desired servo track pitch.
- 5 16. A method according to claim 1, wherein each servo track in the servo pattern is written more than once.
17. A method of laser etching a servo pattern on a magnetic data storage disk comprising:
- 10 providing a source beam of laser energy;
separating the source beam of laser energy into two or more etching beams;
directing the etching beams onto a magnetic coating on the magnetic data storage disk, wherein the etching beams remove at least a portion of the magnetic coating in ablated regions defined by the servo pattern; and
- 15 rotating the magnetic data storage disk relative to the etching beams, whereby at least two servo tracks in the servo pattern are written simultaneously on the magnetic data storage disk.
18. A method according to claim 17, wherein the source beam is linearly
- 20 polarized with a polarization vector, and further wherein separating the source beam comprises directing the source beam into a Wollaston prism with an optical axis that is offset from the polarization vector of the source beam.
19. A method according to claim 18, wherein the Wollaston prism is located
- 25 between first and second lenses, and further wherein changing the distances between the Wollaston prism and the first and second lenses changes a divergence angle between the etching beams.
20. A method according to claim 17, wherein separating the source beam
- 30 comprises directing the source beam into a diffractive optical element.

21. A method according to claim 20, wherein the diffractive optical element comprises a diffraction grating.
- 5 22. A method according to claim 17, wherein each servo track in the servo pattern is written more than once.
23. A method of laser etching a servo pattern on a magnetic data storage tape comprising:
- 10 providing a source beam of laser energy;
separating the source beam of laser energy into two or more etching beams;
directing the etching beams onto a magnetic coating on the magnetic data storage tape, wherein the etching beams remove at least a portion of the magnetic coating in ablated regions defined by the servo pattern; and
- 15 translating the magnetic data storage tape relative to the etching beams, whereby at least two servo tracks in the servo pattern are written simultaneously on the magnetic data storage tape.
24. A method according to claim 23, wherein each servo track in the servo pattern is written more than once.
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